

## ABSTRACT OF THE DISCLOSURE

A relay control method and circuit is designed for use on a computer network system, such as Ethernet, which can perform a load-balancing operation based on a port group configuration in such a manner as to allow an increased network data communication efficiency through an Ethernet Switch. In the invention, a CRC (Cyclic Redundancy Check) operation is performed on the binary address information extracted from each received frame to thereby obtain a CRC modulo. Based on the CRC modulo, the target port of the received data frame is found from a routing table. Then the received frame is forwarded according to the index address, the target port, and the port group configuration. The port group configuration can be adjusted if an over-loading is occurred in the ports belonging to a port group. This method and circuit is more advantageous to use than the prior art in that the number of ports in each group needs not be a 2's power as in the case of the prior art, and instead can be an arbitrary user-selected number no larger than the total number of the ports. Moreover, it can increase the overall network data communication efficiency through the Ethernet Switch device.